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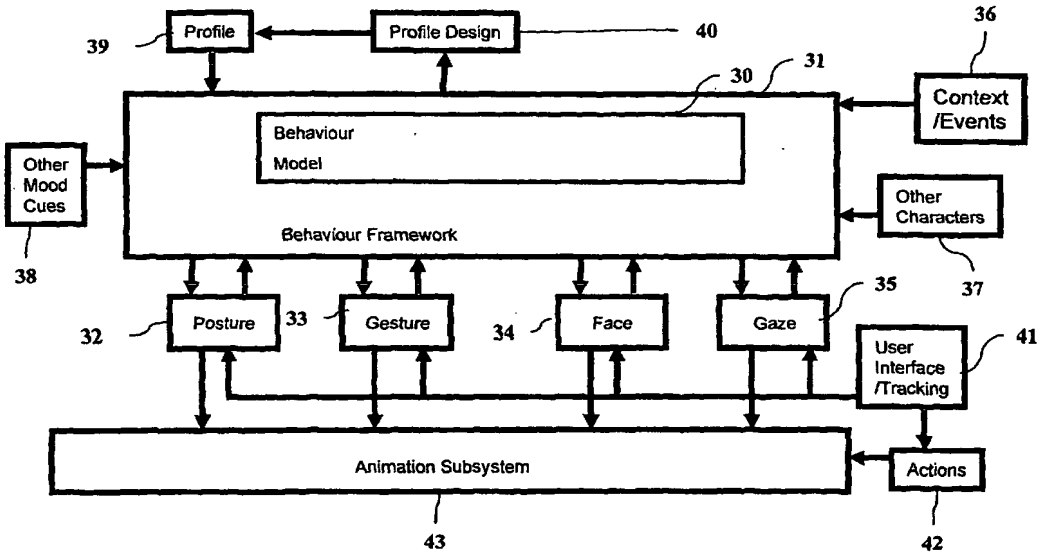
(54) Title: APPARATUS AND METHOD FOR GENERATING BEHAVIOUR IN AN OBJECT



(57) Abstract: A hierarchical behavioural framework is used to generate and control autonomous and semi-autonomous behaviour in an articulate object. A behavioural controller is arranged to receive input associated with a behavioural action, to infer a plurality of behavioural parameter values using the framework, and to generate equivalent behaviour in the articulate object using the parameter values when loaded in the behavioural controller to generate output corresponding to the equivalent behaviour. The equivalent behaviour may reproduce the inputted behavioural action, and /or comprise one or more other behavioural actions, which may be performed simultaneously or as part of a sequence of actions.

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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, COMPENDEX, IBM-TDB, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/27879 A (ELECTRONIC ARTS INC) 19 April 2001 (2001-04-19) page 2, line 18 - line 32 page 7, line 22 - page 8, line 1 page 11, line 5 - line 27 page 12, line 15 - line 27 page 18, line 26 - page 19, line 6 page 19, line 20 - page 20, line 4 page 23, line 23 - line 32 page 25, line 1 - line 19 page 29, line 6 - line 8 figures 1,2,7-11 ----- -/--	1-66

[X] Further documents are listed in the continuation of box C.

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Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Schofield, C

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SATO J ET AL: "Autonomous behavior control of virtual actors based on the AIR model" COMPUTER ANIMATION '97 GENEVA, SWITZERLAND 5-6 JUNE 1997, LOS ALAMITOS, CA, USA,IEEE COPUT. SOC. P, US, 5 June 1997 (1997-06-05), pages 113-118, XP010227328 ISBN: 0-8186-7984-0	1,6-12, 15,19, 21,23, 24, 32-35, 38,39, 42-46, 48,49, 52,61
A	the whole document	
X	US 6 212 502 B1 (BREESE JOHN S ET AL) 3 April 2001 (2001-04-03) figures 2-11 column 4, line 55 - column 5, line 48	1-66
X	EP 0 978 790 A (YAMAHA HATSUDOKI K.K.) 9 February 2000 (2000-02-09)	1-4,6,8, 10-12, 15, 17-22, 25, 31-36, 38,42, 44-46, 50,53
A	column 4, line 32 - column 10, line 6 column 14, line 6 - column 20, line 8; figures 1-19	7,9,13, 14,16, 27-30,51
X	EP 0 992 927 A (KONAMI CO. LTD.) 12 April 2000 (2000-04-12)	1,2,11, 14,15, 17-19, 22,25, 32-34, 42,43, 47,48,54
A	column 1, line 28 - column 3, line 48 column 11, line 16 - column 13, line 13; figures 1-11	3-8,10, 27-31, 35-38, 50,53
P,X	US 2003/137515 A1 (CEDERWALL ET AL.) 24 July 2003 (2003-07-24) paragraph '0008! - paragraph '0020! paragraph '0044! - paragraph '0064! paragraph '0150! - paragraph '0151!; figures 1-8	1-8, 11-19, 22, 25-38, 42,43, 46,50, 51,53

INTERNATIONAL SEARCH REPORT

Information on patent family members

national Application No
T/GB2004/001301

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0127879 A	19-04-2001	US 6522333 B1	18-02-2003
		AU 7865300 A	23-04-2001
		EP 1226550 A1	31-07-2002
		WO 0127879 A1	19-04-2001
US 6212502 B1	03-04-2001	US 6185534 B1	06-02-2001
		US 5987415 A	16-11-1999
EP 0978790 A	09-02-2000	US 6230111 B1	08-05-2001
		EP 0978790 A1	09-02-2000
		JP 2000200103 A	18-07-2000
		JP 2000222378 A	11-08-2000
		JP 2000099490 A	07-04-2000
		US 2002069036 A1	06-06-2002
EP 0992927 A	12-04-2000	JP 2000107442 A	18-04-2000
		EP 0992927 A1	12-04-2000
		US 2002072408 A1	13-06-2002
US 2003137515 A1	24-07-2003	WO 03063079 A2	31-07-2003